

WHAT IS CLAIMED IS:

1. A bi-directional communications system integrated with a remote web-based expert data center wherein a medical programmer for an implantable medical device is linked to the web-based expert center via the bi-directional communications system, the web-based expert data center in combination with the programmer comprising:

the remote web-based expert data center including high-speed computer resources;

the bi-directional communications system being in operable data communications with resources at the remote web-based expert data center; and

the programmer being in executable bi-directional data communications with the web-based expert data center wherein component/sub-component operations and data management of the programmer are monitored, evaluated and modified via commands executed on a remote basis by the high speed computer resources at the web-based expert data center.

2. The communications system of claim 1 wherein said bi-directional communications system includes one of a modem, Internet network, fiber optics, cable, laser transceivers, mobile systems, radio frequency and satellite communications.

3. The communications system of claim 1 wherein said interface includes one of a cellular phone, a palm pilot and a programming device.

4. The communications of claim 2 wherein said Internet network includes the internet structured to provide access to resources located in said remote web-based expert data center and further includes delivery portals.

5. The communications system of claim 2 wherein said mobile systems include a ground-vehicle-installed wireless communications systems having data communications with the remote web-based expert data center and the programmer.

6. The communications system of claim 3 wherein said palm pilot includes handheld computers and screen phones structured to function as webtops to provide access to the internet via one of said bi-directional wireless communications system.

7. The communications system of claim 2 wherein said bi-directional communications system further includes telemetry between the programmer and a plurality of implantable devices.

8. The communications system of claim 7 wherein the implantable device includes a multiplicity of implantable devices in various parts of a patient's body and having independent and common telemetric link to the interface.

9. The communications system of claim 8 wherein said common telemetry link includes communication between said multiplicity of implantable devices implemented at a location within one of the implanted devices.

10. The communications system of claim 2 wherein said laser transceivers are implemented to wirelessly transmit data received via optical wireless systems wherein the data is split, into specified wavelengths, using an amplifier, a laser and a receiver to wirelessly transmit the data to the remote clinic station.

11. The communications system of claim 2 wherein said modem includes a telephone connection including POTS, Switched 56, ISDN and T1.

12. The communications system of claim 1 wherein said resources at the remote web-based data center include operators, clinicians and web-based high speed computers containing centralized data and information structured to provide distance-based clinical support to patients with implantable devices.

13. The communications system of claim 1 wherein said programmer includes a memory system to store data from the web-based data center for later transfer to the implantable device.

14. A wireless communications system wherein a web-based data center located in a remote information station is in wireless communications with a programmer or webtop unit wherein various clinical data and therapy are delivered through portals which are uploaded into at least one implantable medical device via the programmer or webtop unit, the programmer being disposed external to but within a telemetry range of the implanted medical device, the wireless communications system in combination with the programmer comprising:

The web-based data center utilizing Telnet protocol to provide bi-directional communications with the programmer;

the programmer having direct bi-directional communications with the at least one implantable medical devices; and

the at least one implantable medical device having telemetric wireless communications with the programmer.

15. The wireless system of claim 14 wherein the various clinical data and therapy delivered through the portals include executable commands

implemented in the programmer to remotely perform maintenance on components and manage a data base.

5 16. The system of claim 15 wherein said maintenance on the components includes software upgrade on imbedded systems of the programmer.

17. The system of claim 15 wherein said database includes usage logs, patient data, error logs and performance parameter information.

10 18. The system of claim 14 wherein said webtop is implemented to transfer non-critical information from said web-based data center.

19. The system of claim of claim 15 wherein said database includes patient history that is transferred to the programmer by up linking the at least on implantable medical device.

15 20. The system of claim 17 wherein said usage logs includes an imbedded system implemented clock/timer data relating to the number of connections between the at least one implantable medical device and the programmer.

20